


UNIVERSITY OF RUHUNA  FACULTY OF MEDICINE

SECOND EXAMINATION FOR MEDICAL DEGREE

PHYSIOLOGY II

JULY 2003 TIME: THREE HOURS

Answer all five questions
Answer part A & B in separate answer books

PART A

1. Give physiological explanation for the following:
 - 1.1 Hyperbaric oxygen is given in the treatment of carbon monoxide poisoning. 40 marks
 - 1.2 β -stimulants are useful in the treatment of bronchial asthma. 30 marks
 - 1.3 The packed cell volume is higher than normal in patient with long standing hypoxia. 30 marks

2.
 - 2.1 Using a clearly labelled diagram, describe different phases of an action potential in a cardiac muscle fibre. 30 marks
 - 2.2 Describe "electro-mechanical coupling" in a cardiac muscle fibre. 30 marks
 - 2.3 Describe the Starling's law of the heart. 40 marks

3. A 40 year old female presented with an intermittent right-sided abdominal pain of 5 days duration. She complained of passing dark urine and pale stools. On examination, she was found to be jaundiced.
 - 3.1 List 5 investigations you would do to arrive at a diagnosis. 20 marks
 - 3.2 State the expected results of the tests you have mentioned in 3.1. 30 marks
 - 3.3 State the likely diagnosis giving reasons. 50 marks

PART B

4.
 - 4.1 List the hormones secreted by the adrenal cortex. 10 marks
 - 4.2 List three features that may occur in increased secretion of each of these hormones. 30 marks
 - 4.3 Describe the regulation of extracellular Na^+ by the adrenal gland. 60 marks

5. Write short notes on
 - 5.1 the counter-current mechanism. 25 marks
 - 5.2 endemic goitre. 25 marks
 - 5.3 axoplasmic transport. 25 marks
 - 5.4 limbic functions. 25 marks